

# DES: YESTERDAY, TODAY, TOMORROW

## DES: Yesterday

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Diethylstilbestrol (DES) is an estrogen that was first manufactured in a laboratory in 1938, so it is called a “synthetic estrogen.” During 1938–1971, U.S. physicians prescribed DES to pregnant women to prevent miscarriages and avoid other pregnancy problems. As a result, an estimated 5–10 million pregnant women and the children born of these pregnancies were exposed to DES. Physicians prescribed DES to pregnant women on the theory that miscarriages and premature births occurred because some pregnant women did not produce enough estrogen naturally. At the time, physicians thought DES was safe and would prevent miscarriages and pre-term (early) births.

In 1953, published research showed that DES did not prevent miscarriages or premature births. However, DES continued to be prescribed until 1971. In that year, the Food and Drug Administration (FDA) issued a Drug Bulletin advising physicians to stop prescribing DES to pregnant women. The FDA warning was based on a study published in 1971 that identified DES as a cause of a rare vaginal cancer in girls and young women who had been exposed to DES before birth (in the womb).

The news that DES could be harmful led to a national effort to find women prescribed DES while pregnant and notify them of the potential DES-related health problems. Physicians reviewed patients’ medical records and notified women who had been prescribed DES. As a result of this effort, many women were made aware of the DES health risk known at that time, known as clear cell adenocarcinoma (CCA), a rare vaginal cancer. Women were encouraged to have their DES-exposed daughters screened regularly by a gynecologist because CCA was found in girls as young as 8 years old.

Women contacted during the 1970s, along with their children, formed the core of large study groups that researchers call “cohorts.” Researchers studied the health of these DES-exposed cohorts for more than 20 years. Much of what is known about DES-related health risks is the result of these long-term studies. For more information on these cohort studies, refer to the section of CDC’s DES Update titled [WHAT WE ARE LEARNING ABOUT DES: Recent DES Research](#).

Despite earlier efforts to identify DES-exposed women and men, many persons exposed to DES were not located. These persons may not realize that they were exposed to DES. Unfortunately, no medical test (such as blood, urine, or skin analysis) can detect DES exposure. However, to assess whether you may have been exposed to DES and to learn what you can do about DES, refer to the sections of CDC’s DES Update titled [DES SELF-ASSESSMENT: A Guide to Understanding Your Risk for DES Exposure](#), and [WHAT YOU CAN DO ABOUT DES](#).

All DES-exposed persons are at an increased risk for developing some health problems when compared with persons who were not exposed to DES. All of the health problems related to DES exposure also can occur in persons who were not exposed to DES. To learn more, refer to the section of CDC’s DES Update titled [WHAT WE KNOW ABOUT DES: Known DES Health Effects](#).

Many companies manufactured DES and similar synthetic drugs. In 1976, the *Journal of the American Medical Association (JAMA)* published a list of the most commonly used names and spellings for DES and similar drugs.

<b>DES Type-Drugs That May Have Been Prescribed to Pregnant Women</b> <small>(Source: NCI. Exposure in utero to diethylstilbestrol and related synthetic hormones. JAMA (Sept 6, 1976)-Vol 236 No. 10, pp. 1107-1109.)</small>			
<b><i>Nonsteroidal Estrogens</i></b>	Fonatul	Palestrol	<b><i>Nonsteroidal Estrogen-Androgen Combination</i></b>
Benzestrol	Gynben	Restrol	Amperone
Chlorotrianisene	Gyneben	Stil-Rol	Di-Erone
Comestrol	Hexestrol	Stilbal	Estan
Cyren A	Hexoestrol	Stilbestrol	Metystil
Cyren B	Hi-Bestrol	Stilbestronate	Teserene
Delvinal	Menocrin	Stilbetin	Tylandril
DES	Meprane	Stilbinol	Tylostereone
DesPlex	Mestilbol	Stilboestroform	
Dibestil	Microest	Silboestrol	
Diestryl	Methallenestrol	Stilboestrol DP	<b><i>Nonsteroidal Estrogen-Progesterone Combination</i></b>
Dienestrol	Mikarol	Stilestrate	Progravidium
Dienoestrol	Mikarol forti	Stilpalmitate	
Diethylstilbestrol dipalmitate	Milestrol	Stilphostrol	
Diethylstilbestrol diphosphate	Monomestrol	Stilronate	<b><i>Vaginal Cream Suppositories with Nonsteroidal Estrogens</i></b>
Diethylstilbestrol dipropionate	Neo-Oestranol I	Stilrone	AVC Cream w/ Dienestrol
Diethylstilbenediol	Neo-Oestranol II	Stils	Dienestrol Cream
Digestil	Nulabort	Synestrin	
Domestrol	Oestrogenine	Synestron	
Estilben	Oestromenin	Synthosestrin	
Estrobene	Oestromon	Tace	
Estrobene DP	Orestol	Vallestril	
Estrosyn	Pabestrol D	Willestrol	

## DES: Today

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Over the years, research has shown that exposure to DES puts both women and men at an increased risk for certain health problems. This means that some, but not all, of the women and men who were exposed to DES will experience one or more DES-related health problems.

Research confirms the following increased health risks associated with DES:

### **Women Prescribed DES While Pregnant are at a modestly increased risk for**

- Breast cancer

### **DES Daughters are at an increased risk for**

- Clear cell adenocarcinoma (CCA), a rare kind of vaginal and cervical cancer

Increased risk for clear cell cancer appears to be highest for DES Daughters in their teens and early 20s. However, case have been reporter for DES Daughters in their 30s and 40s (Hatch, 1998).

- Reproductive tract structural differences (for example, T-shaped uterus)
- Pregnancy complications, including ectopic (tubal) pregnancy and pre-term (early) delivery
- Infertility

### **DES Sons are at an increased risk for**

- Non-cancerous epididymal cysts (growths on the testicles)

To learn more about DES-related health risks, refer to the section of CDC's DES Update titled [WHAT WE KNOW ABOUT DES: Known DES Health Effects](#).

No medical test (such as a blood, urine, or skin analysis) can detect DES exposure. Tracing old medical records that prove DES exposure is difficult. Understandably, many women do not remember whether they were prescribed DES while pregnant. Physicians who prescribed DES may have retired or passed away. Their records may have been destroyed. All these factors make it difficult for persons to determine their DES-exposure status with certainty.

We do know that women who were not under a physician's care during their pregnancy likely did not receive DES, because it required having a physician's prescription. However, sometimes physicians gave DES pills or injections directly to their patients. We also know that most women who were prescribed DES had a history of miscarriage or giving birth prematurely.

For help deciding whether you might have been exposed to DES, refer to the section of CDC's DES Update titled [DES SELF-ASSESSMENT: A Guide to Understanding Your Risk for DES Exposure](#).

## **DES: Tomorrow**

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Although some questions about the long-term risks of DES exposure remain unanswered, related health effects have taken a heavy toll on many families. As research continues, we might learn about new DES health risks that have not yet been identified.

Fortunately, DES-exposed persons can take action to protect their health. They can work with their health care providers to learn about and follow appropriate preventive health behaviors. They can get regular screenings, and they can stay up-to-date on risks associated with DES exposure.

CDC's DES Update can help you take action. It is designed to give you the most complete, up-to-date information on DES, including how to evaluate exposure and make informed decisions to protect the health of you and your family.